

The intensity of anxiety, neurotic symptoms and perceived control among patients with neurotic and personality disorders

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Summary

Aims: The study aimed to determine the relationship between the intensity of anxiety, neurotic symptoms and perceived control using Bryant's Four-Factor Model of Perceived Control. The goal of the study was also to describe the structure of perceived control among patients with neurotic and personality disorders.

Materials and methods: The study included 49 patients with neurotic disorders, personality disorders or comorbid neurotic and personality disorders from a psychotherapy hospital department. We used the following tools: the KO "O" Symptom Checklist, the KON-2006 Neurotic Personality Questionnaire, a Polish adaptation of State-Trait Anxiety Inventory (STAI), and Bryant's Questionnaire of Perceived Control.

Results: The intensity of neurotic personality and anxiety-trait is significantly negatively correlated with most indicators of perceived control.

Discussion: Some studies in the literature have found an association between perceived control and anxiety disorders, depressive disorders and even psychotic states. To date, Rotter's one-dimensional scale has been used in most studies (internal vs. external locus of control). The present study enables researchers to broaden the perspective on perceived control, adding cognitive control and emotional control over positive as well as negative events.

Conclusions: Most of the various factors of perceived control are related to some extent to the personality structure, which is responsible for the occurrence of neurotic disorders, and to some extent to anxiety trait – an important predictor for neurotic disorders. The results presented are relevant to patients suffering from neurotic symptoms and diagnosed with neurotic disorders and personality disorders according to ICD-10 criteria.

anxiety, perceived control, neurotic disorders, personality disorders

INTRODUCTION

The results presented in this paper form part of a research project titled "Psychological determinants of time perspective among patients with neurotic symptoms", realized at the Institute of Applied Psychology of Jagiellonian University in Krakow and the Department of Psychother-

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apy of the Jagiellonian University Medical College in Krakow, Poland. Due to the complexity of study data, different aspects of the project are presented in separate papers.

Perceived control, as well as a sense of coherence, optimism, self-esteem, self-efficacy, emotional intelligence, hardiness and resilience, is one of the personality characteristic defined as psychological resources or health potential [1]. It refers to the degree a person believes in their ability to influence the events of daily life and to their attitude towards the world around them, themselves and an assessment of their own capabilities. Regardless of the many definitions and classifications of a sense of personal control, it can most generally be described as a perception of having control over nature, events and situational factors [2]. Perceived control may not correspond to actual control understood in terms of competence or contingencies [3]. It is important to distinguish between perceived control and control-related constructs such as self-efficacy and attributional style. Self-efficacy [4] describes one’s belief in the ability to succeed in achieving goals. This construct places much more emphasis on the person’s skills and competences rather than on the degree to which outcomes are contingent on behavior [3]. Attributional style is a relatively individual and constant way of describing one’s successes and failures [5], i.e. people may attribute their successes and failures to internal or external causes, long-term or short-term consequences, and affecting all situations or a particular one. Both constructs – perceived control and attributional style – are important factors in vulnerability to learned helplessness [6] and depression [7]. This paper is primarily

focused on the construct of perceived control and its role in the psychopathology of neurotic disorders.

To date, most studies referring to personal control have used Rotter’s Locus of Control Scale [8]. Rotter’s model of control reinforcement is a one-dimensional model accommodating the individual’s control as an absolute absence of control (external control) or as an absolute control (internal control), with no intermediary level. Throughout life, one’s belief regarding the ability to influence outcomes develops as a result of positive and negative reinforcements. People learn that events are caused due to their own influence or due to factors independent of them. Some researchers believe that people perceive control over experiences in more than one dimension [9-13]. Fred Bryant proposed a multidimensional model including cognitive-behavioral control (primary control – over events) and emotional control (secondary control – over feelings in response to the cognitive perception of events) as well as control over events perceived as positive or negative. He called it a Four-Factor Model of Perceived Control [14]. In this paper, we distinguish four factors of perceived control: avoiding, coping, obtaining and savoring (Table 1). Consequently, an individual’s perceived control consists of a belief in the ability/possibility of avoiding events interpreted as negative experiences (primary, negative control), coping with negative events (secondary, negative control), “obtaining events” interpreted as positive experiences (primary, positive control) and savoring positive emotions in response to events interpreted as positive experiences (secondary, positive control).

Table 1. Four-Factor Model of Perceived Control

	Control over negative events	Control over positive events
Control over events	Avoiding	Obtaining
Control over feelings	Coping	Savoring

Based on Bryant, 1989.

Avoiding encompasses such mechanisms as those triggered when a situation around a person is perceived as negative and activates instruments leading to making changes in the environment. Coping is a form of control perception over feelings when events around a person

are perceived as negative and activate a need for internal changes in the person. Obtaining means a perception of one’s own ability to experience positive events. Savoring is an individual’s ability to activate and experience positive feelings when events around them are perceived as pos-

itive. Confidence about one's ability to avoid aversive events and coping there with is related to the degree of psychological distress rather than one's well-being. On the other hand, confidence about one's ability to have positive experiences and positive emotions is more related to the latter (i.e. psychological well-being) than to the former.

Bryant's four-factor model has good properties in predicting the level of psychological well-being and distress [14,15]. This indicates that the model can be potentially used in scientific research in the fields of clinical psychology and health psychology.

AIMS

The study aimed to determine the relationship between the intensity of anxiety, neurotic symptoms and perceived control using Bryant's Four-Factor Model of Perceived Control. Numerous studies using different tools have shown a relationship between the sense of personal control and anxiety disorders [2]. Due to this fact, it is postulated that a similar association might be observed in relation to neurotic symptoms regardless of a diagnosis of neurotic or personality disorders. A goal of the study was also to describe the structure of perceived control among patients with neurotic and personal disorders: control over negative *versus* positive experiences and control over events (cognitive-behavioral control) *versus* control over feelings (emotional control). The study was based on the assumption that emotional control is a part of perceived control and probably requires much more effort and personal resources than cognitive-behavioral control. In direct contact with patients with neurotic symptoms it can be observed that they have difficulties primarily with coping with reality on the emotional level.

We put forward the following hypotheses:

- The higher the intensity of neurotic symptoms and neurotic personality, the lower the degree of perceived control.
- The higher the intensity of anxiety, the lower the degree of perceived control.
- Among patients with neurotic symptoms (both neurotic and personal disorders), primary (cognitive-behavioral) control is higher than secondary (emotional) control.

MATERIALS AND METHODS

Sample

The study was carried out on a sample of 49 patients (32 women and 17 men) in a psychotherapy hospital department. Patients with neurotic personality and neurotic disorders (F40-F48) or personality disorders (F60-F61) according to ICD-10 [16] were included. During the treatment qualification procedure, 16 patients (32.6%) were diagnosed with only neurotic disorders (F40-F48), 19 patients (38.8%) with only personality disorders (F60-F61), and 14 patients (28.6%) obtained a mixed diagnosis – comorbid neurotic and personality disorders. In the neurotic disorders group, 20 people (66.7%) were diagnosed with a disorder within the F41 group – other anxiety disorders, 4 people (13.3%) with reaction to severe stress and adjustment disorders (F43), 3 people (10%) with phobic anxiety disorders (F40) and 3 people (10%) with somatoform disorders (F45). In the personality disorders group, 15 patients (45.5%) were diagnosed with specific personality disorders (F60.0-F60.7), 13 patients (39.4%) with other specific personality disorders (F60.8), 4 patients (12.1%) with mixed and other personality disorders (F61), and 1 person (3%) was found to suffer from an unspecified personality disorder (F60.9). All patients suffered from neurotic symptoms.

The group consisted of 32 women (65.3%) and 17 men (34.7%). Median age was 32 years (range 22 to 46). The majority of patients (66.2%) were single, lived in a single-person household (46.9%), had received higher education (81.6%), worked full time (64.6%) and lived in a city of over 500,000 inhabitants (83.7%) (Table 2).

Table 2. Demographic characteristics of study participants

	Women 65.3% (32)	Men 34.7% (17)
Age, years: mean±SD median	31.6±5.9 32	30.8±5.9 32
Marital status, % (N)		
Single	62.5% (20)	58.8% (10)
Stable partnership	21.9% (7)	0% (0)
Married	12.5% (4)	23.5% (4)
Widowed	0% (0)	0% (0)
Separated	0% (0)	17% (3)
Divorced	3.1% (1)	0% (0)
Household, % (N)		
Single-person	43.8% (14)	52.9% (9)
With husband/wife	9.4% (3)	17.7% (3)
With partner	25% (8)	17.6% (3)
With children	6.2% (2)	0% (0)
With parents/parents-in-law	15.6% (5)	11.7% (2)
Education, % (N)		
Primary education	0% (0)	0% (0)
Vocational qualification	0% (0)	0% (0)
Secondary education	12.5% (4)	17.6% (3)
Post-secondary school	3.1% (1)	5.9% (1)
Higher education	84.4% (27)	76.5% (13)
Professional status, % (N)		
Student	12.5% (4)	25% (4)
Unemployed	6.2% (2)	18.8% (3)
Part-time job	12.5% (4)	0% (0)
Full-time job	68.8% (22)	56.2% (9)
Residence, % (N)		
Village	9.4% (3)	5.9 % (1)
Town up to 20,000 inhabitants	0% (0)	5.9 % (1)
City up to 100,000 inhabitants	3.1% (1)	5.9% (1)
City over 100,000 inhabitants	3.1% (1)	0% (0)
City over 500,000 inhabitants	84.4% (27)	82.3% (14)

The study was approved by the Bioethics Committee of the Jagiellonian University Medical College, no. 122.6120.251.2015, and conducted between December 2015 and June 2016. All patients included in the study gave informed consent. Each patient was informed about the right to resign without any consequences for their healthcare. The study was performed in the patients’ place of treatment. Patients had to complete a set of questionnaires.

Methods

The intensity of neurotic psychopathology was estimated by the KO “O” Symptom Check-

list and by the KON-2006 Neurotic Personality Questionnaire. The KO “O” Symptom Checklist serves to assess the intensity of neurotic symptoms. It consists of 138 items and 14 following scales: fobic disorders, other anxiety disorders, obsessive–compulsive disorders, conversions, autonomic nervous system disorders – heart and cardiovascular system, somatization disorders, hypochondriacal disorders, neurasthenia, depersonalization–derealization syndrome, mixed personality disorders F60.3 and F60.4 – impulsive and histrionic, sexual dysfunctions, dysthymia. The global symptom level (OWK) enables a diagnosis of neurotic disorders. The cut-off score for women is 200 points and for men 165 points. Internal consistency measured by Cron-

bach's alpha coefficient is 0.82, with accuracy above 90% [17-20]. The results achieved during the qualification procedure to psychotherapy and from the week in which the procedure was conducted were included in the study.

The KON-2006 Neurotic Personality Questionnaire enables us to differentiate between people suffering from neurotic personality and people who are mentally healthy. It consists of 24 scales: sense of addiction to the surroundings, asthenia, negative self-esteem, impulsivity, difficulty in decision making, sense of alienation, demobilization, low risk seeking, difficulty in emotional relations, lack of vitality, conviction about being incapable in dealing with life, sense of lack of impact, lack of internal control, imagination, fantasizing, sense of guilt, difficulty in interpersonal relationships, envy, narcissistic attitude, sense of danger, exultation, irrationality, minuteness, rumination, feeling overloaded. A global score typical for a person with a mental disorder is above 18 points, while a healthy person's score is below 8 points. A score between 8 and 18 points is recognized as "uncertain". Internal consistency measured by Cronbach's alpha ranges from 0.6 to 0.9 [21]. The study considered the score achieved during a psychotherapy qualification procedure.

In order to investigate the intensity of anxiety, a Polish adaptation of the State-Trait Anxiety Inventory (STAI) developed by Spielberger et al. was used [22,23]. The tool is based on a distinction between anxiety understood as a temporary and situational state and anxiety understood as a relatively constant personality trait. Both the original [22] and the Polish [23] version have been designed for the examination of healthy and ill people aged over 15. The tool consists of 40 items grouped into 2 scales – anxiety-state and anxiety-trait. Internal consistency of the Polish version measured by Cronbach's alpha is 0.90 for anxiety-state and 0.88 for anxiety-trait.

To measure perceived control, the Questionnaire of Perceived Control developed by F.B. Bryant was used. As the questionnaire has not been adapted into the Polish language, we have translated the scale with the author's permission for the purpose of this study. The tool consists of 15 items. In the first section people are asked to answer 6 statements about adverse events and

in the second one they are asked about 9 auspicious events. The scale has 4 factors of perceived control – avoiding, coping, obtaining and savoring. A sum from all four factors is the global measure of perceived control in daily life. Internal consistency of the original questionnaire measured by Cronbach's alpha is 0.60 for avoiding, 0.70 for coping, 0.71 for obtaining and 0.78 for savoring [14]. Internal consistency measured for the purpose of this study yielded Cronbach's alpha at 0.10 for avoiding, 0.75 for coping, 0.79 for obtaining and 0.79 for savoring.

The KO "O" Symptom Checklist assessing global symptom levels (OWK) was used twice – during a psychotherapy qualification procedure and in the week in which the procedure was conducted. The Neurotic Personality Questionnaire (XKON) assessing the level of neurotic personality disintegration was used once – during the psychotherapy qualification procedure.

Statistical analysis was conducted using StatSoft Statistica 12.

RESULTS

The average intensity of neurotic symptoms during the psychotherapy qualification procedure measured with KO "O" Symptoms Checklist for the entire group reached 340.14 ($W=325.47$; $M=367.76$; min. 64, max. 617). Standard deviation 129.83 ($W=141.73$; $M=102$). The average intensity of neurotic symptoms measured with KO "O" in the week in which the research was conducted reached 223.63 ($W=215.53$; $M=238.88$), (min. 52; max. 490). Standard deviation 223.63 ($W=215.53$; $M=238.88$), (min. 52; max. 490). The average for Neurotic Personality Questionnaire measured during qualification to treatment reached 40.87 ($W=37.88$; $M=46.85$), (min. 8; max. 101). Standard deviation 22.57 ($W=23.69$; $M=19.48$).

The average of anxiety-state measured using the Polish version of STAI reached 49.87 ($W=51.95$; $M=45.94$), min. 27; max. 73. Standard deviation 11.11 ($W=10.63$; $M=11.22$). The average of anxiety-trait measured using the Polish version of STAI reached 52.67 ($W=52.69$; $M=52.65$), min. 26; max. 71. Standard deviation 9.32 ($W=10.91$; $M=5.48$).

The perceived control was measured using Bryant's Perceived Control Questionnaire.

The average for global control reached 0.58 (W=0.59; M=0.55), min. 0.35; max. 0.83. Standard deviation 0.1 (W=0.1; M=0.09). The average for Avoiding reached 0.55 (W=0.55; M=0.55), min. 0.19; max. 0.81. Standard deviation 0.12 (W=0.13; M=0.1). The average for Coping – 0.44 (W=0.42; M=0.47), min. 0.18; max. 0.76. Standard deviation 0.15 (W=0.16; M=0.14). The average for Obtaining – 0.63 (W=0.65; M=0.6), min. 0.3; max. 1. Standard deviation 0.43 (W=0.36; M=0.53). The average for Savoring – 0.64 (W=0.67; M=0.57), min. 0.32; max. 0.96. Standard deviation 0.25 (W=0.23; M=0.12).

The first step in statistical analysis of interdependence was checking whether the structure of all variables differs due to demographic factors such as gender, marital status and household status. Because of an insufficient number of subclasses, differences based on education and professional status were not verified. Student’s t-test revealed a statistically significant difference by gender for savoring – one of the factors forming perceived control (women: M=0.67, SD=0.15; men: M=0.57, SD=0.13; t=–2.48; P=0.0166). Variant analysis did not show any significant differences in the intensity of neurotic symptoms and anxie-

ty based on medical diagnosis of neurotic disorders, personality disorders or double diagnosis. A significant difference was found in perceived control for savoring (neurotic disorders M=0.69; personality disorders M=0.56; double diagnosis M=0.67; partial eta-squared 0.1633; P=0.0165).

Table 3 sets out results from correlation analysis of the relationship between the intensity of neurotic psychopathology and perceived control. It was established that intensity of neurotic personality – personality structure related to the occurrence of neurotic disorders measured by XKON had a significant negative association with all indicators of perceived control (excluding avoiding, due to a very low Cronbach’s alpha coefficient). Most correlations were moderate. There were few associations between perceived control and symptom intensity as measured by KO “O” – symptoms did not directly relate to background personality. There were only two significant relatively weak correlations: between the intensity of symptoms experienced at the time of being qualified for psychotherapy and control over feelings and between the degree of actual symptoms and control over negative events.

Table 3. Relationships between the intensity of neurotic psychopathology and perceived control

	Global symptom levels (OWK) before psychotherapy		Global symptom levels (OWK) during psychotherapy		Level of neurotic personality disintegration before psychotherapy	
	r	r ²	r	r ²	r	r ²
Global indicator	-0.22	0.05	-0.19	0.04	-0.53***	0.28***
Avoiding	-0.02	0.00	-0.18	0.03	-0.21	0.04
Coping	-0.27	0.07	-0.27	0.07	-0.43**	0.19**
Obtaining	-0.02	0.00	-0.03	0.00	-0.40**	0.16**
Savoring	-0.25	0.06	-0.10	0.01	-0.33*	0.11*
Control over events	-0.03	0.00	-0.10	0.10	-0.42**	0.17**
Control over feelings	-0.32*	0.10*	-0.22	0.05	-0.47***	0.22***
Negative control	-0.21	0.05	-0.30*	0.09*	-0.45**	0.20**
Positive control	-0.17	0.03	-0.08	0.01	-0.45**	0.20**

*P<0.05; **P<0.01; ***P<0.001

Detailed results of correlations between the intensity of anxiety and degree of perceived control are shown in Table 4. The study found

a moderate negative relationship between the intensity of anxiety-trait and a global indicator of perceived control as well as coping and ob-

taining factors. Anxiety interpreted as a trait is negatively associated with primary control over events (moderate correlation) and with secondary control over feelings that appear in response

to these events (relatively weak correlation), as well as with events interpreted as negative experiences (moderate correlation) and as positive experiences (relatively weak correlation).

Table 4. Relationships between the intensity of anxiety and perceived control

	Anxiety-state		Anxiety-trait	
	r	r ²	r	r ²
Global indicator	-0.06	0.00	-0.47***	0.22***
Avoiding	-0.12	0.01	-0.16	0.03
Coping	-0.20	0.04	-0.56***	0.32***
Obtaining	-0.11	0.01	-0.48***	0.23***
Savoring	0.19	0.03	-0.04	0.00
Control over events	-0.14	0.02	-0.47***	0.22***
Control over feelings	0.03	0.00	-0.33*	0.11*
Negative control	-0.22	0.05	-0.52***	0.27***
Positive control	0.0478	0.0022	-0.32*	0.10*

*P<0.05; **P<0.01; ***P<0.001

Student’s t-test did not show any significant differences between the global degree of primary and secondary control in any of the study groups. When the analysis included a differentiation based on the medical diagnosis, a significant difference among patients with personality disorders was revealed – namely, a significantly higher degree of control over events than over feelings (P=0.0211). A more detailed analysis, including a differentiation of all perceived control factors, showed that the difference is relat-

ed especially to control over negative experiences, regardless of the medical diagnosis. For this kind of control, the degree of control over emotions (factor: coping) is significantly lower than control over events (factor: avoiding) (P=0.0001) among patients with neurotic disorders as well as personality disorders. Control over positive experiences did not differ in the degree of perceived control over events and over emotions (lack of significant difference between obtaining and savoring) in the entire study group.

Table 5. Differences in perceived control in the sample

Variable	Control over events (primary)		Control over feelings (secondary)		t (47)
	M	SD	M	SD	
All study groups	0.60	0.11	0.56	0.11	1.76
Neurotic disorders	0.63	0.10	0.60	0.14	0.47
Personality disorders	0.59	0.11	0.51	0.09	2.41*
Double diagnosis	0.58	0.13	0.57	0.10	0.27
	Avoiding		Coping		
All study groups	0.55	0.12	0.44	0.15	4.06***
Neurotic disorders	0.57	0.09	0.47	0.16	2.06*
Personality disorders	0.56	0.11	0.42	0.15	3.26**
Double diagnosis	0.51	0.15	0.43	0.14	1.61
	Obtaining		Savoring		

All study groups	0.63	0.16	0.64	0.15	-0.19
Neurotic disorders	0.66	0.17	0.69	0.18	-0.47
Personality disorders	0.60	0.17	0.56	0.18	-0.47
Double diagnosis	0.63	0.16	0.70	0.12	-0.72

*P<0.05; **P<0.01; ***P<0.001

Using Student’s t-test, we assessed whether there are differences between control over negative events and over positive events. The results showed a significantly higher degree of positive control than negative control in the entire group. A more detailed analysis, including differentiation of all factors, revealed that these results are especially significant in relation to control over

feelings – a significantly higher score of savoring than coping (P=0.0000) no matter the diagnosis. For control over events, differences are relevant in the entire group (P=0.0067) and in the double diagnosis group (P=0.0417), but they are irrelevant in the group of neurotic disorders and personality disorders. It is probably the result of a lower statistical effect.

Table 6. Differences in perceived control in the sample

Variable	Negative control		Positive control		t (47)
	M	SD	M	SD	
All study groups	0.49	0.10	0.63	0.13	-6.02***
Neurotic disorders	0.52	0.10	0.68	0.13	-3.68***
Personality disorders	0.49	0.10	0.58	0.11	-2.69*
Double diagnosis	0.47	0.11	0.65	0.12	-4.31***
Avoiding		Obtaining			
All study groups	0.55	0.12	0.63	0.16	-2.77**
Neurotic disorders	0.57	0.09	0.66	0.17	-1.88
Personality disorders	0.56	0.11	0.60	0.15	-0.80
Double diagnosis	0.51	0.15	0.63	0.16	-2.13*
Coping		Savoring			
All study groups	0.44	0.15	0.64	0.15	-6.52***
Neurotic disorders	0.47	0.16	0.69	0.18	-3.56**
Personality disorders	0.42	0.15	0.56	0.11	-3.26**
Double diagnosis	0.43	0.14	0.67	0.12	-5.01***

*P<0.05; **P<0.01; ***P<0.001.

The Global Indicator of Perceived Control turned out to be significantly higher among persons with neurotic disorders than those with personality disorders (P=0.0274). Compared with patients with neurotic disorders, patients with personality disorders show a significantly lower degree of secondary control – control over feelings (P=0.0177), control over positive events (P=0.0209). A more detailed analysis revealed sa-

voring – the ability to activate and experience positive emotions when events are perceived by the person as positive – to be a key differentiating factor (P=0.0125). There were no differences in primary control – control over events, control over negative events and factors such as avoiding, coping and obtaining among the groups. The analysis did not include persons with a double diagnosis.

Table 7. Differences in perceived control among patients with neurotic and personality disorders

Variable	Neurotic disorders		Personality disorders		t
	M	SD	M	SD	
Global Indicator	0.61	0.09	0.54	0.09	2,31*
Control over events	0.63	0.10	0.59	0.11	1.11
Control over feelings	0.60	0.13	0.51	0.09	2.50*
Negative control	0.52	0.10	0.49	0.10	0.89
Positive control	0.68	0.13	0.58	0.11	2.43*
Avoiding	0.57	0.09	0.56	0.11	0.19
Coping	0.47	0.16	0.42	0.15	1.00
Obtaining	0.66	0.17	0.60	0.15	1.15
Savoring	0.69	0.18	0.56	0.11	2.65

*P<0.05; **P<0.01; ***P<0.001.

DISCUSSION

The literature contains some findings obtained using different measures that show an association between perceived control with anxiety disorders [2, 24, 25], depressive disorders [26-31] and even psychotic states [32-34].

Regarding depression, research clearly indicates positive correlations between external locus of control and depression [29]. External locus of control or lack of control can lead to a feeling of helplessness, negative thoughts about the future and consequently, depression [5]. This process can be observed since childhood [35-37]. However, without considering a differentiation between control over negative events and over positive events, the effect seems to be contrary to the typical image of a depressed person experiencing guilt due to failure [38,39]. Due to this fact, studies with a one-dimensional model of external-internal control are discussed, and therefore models presenting perceived control based on more than one dimension enable researchers to conduct a much more precise and thorough analysis.

A similar effect is noted in publications relating to studies conducted in the anxiety disorders group. A literature review clearly shows the co-existence of higher intensity of anxiety-state and external control understood as a lack of control. Kennedy et al. [24] conducted a study using the Levenson's Scale [40] among patients with de-

pression, panic disorders, generalized anxiety disorders, social phobia, obsessive-compulsive disorders and mixed anxiety disorders. Levenson's model describes control in a way similar to Rotter's model, as a one-dimensional continuum of external-internal control. One difference is that external control is separated into control related to others and control related to fate. The study [24] did not reveal significant differences in the degree of internal control – Internal Scale – between the clinical and control groups. Differences were significant in the degree of control related to the influence on others – Powerful Others Scale – and control related to fate – Chance Scale (higher scores among people with depression, panic disorders, phobic disorders, mixed anxiety disorders). It can be assumed that external control represents – to some extent – a low degree of global indicator of perceived control in Bryant's model. Our study confirms the associations mentioned above and enables researchers to broaden the perspective of perceived control, adding cognitive control and emotional control over positive events as well as negative ones.

According to Gallagher et al.'s meta-analysis [2], comprising results from 51 studies conducted using the ACQ Scale Anxiety Control Questionnaire [41] among people with anxiety disorders, there are significant negative correlations between perceived control and anxiety-trait and between perceived control and the medical di-

agnosis of anxiety disorders (including such disorders as: generalized anxiety disorder, social phobia, obsessive-compulsive disorder, panic disorder, post-traumatic stress disorder). In the authors' opinion, perceived control could be an intermediate factor between effects of cognitive-behavioral therapy and anxiety disorders. The research conducted using the multidimensional four-factor model supports the thesis of a relationship between anxiety-state – personality disposition and perceived control. Rapee et al.'s analysis [41] shows difficulties in emotional control, and research conducted using Bryant's scale completes the picture. Firstly, it indicates an additional important dimension – cognitive-behavioral control. Secondly, it stresses the role of perceived control, not only over negative emotional states, but also over positive, pleasant states.

No study was found in the literature related to a relationship between the intensity of anxiety, psychopathology and perceived control using Bryant's four-factor model. Most studies about an association between perceived control and anxiety focused on a group of anxiety disorders, not personality disorders. The present study included persons diagnosed with personality disorders who also suffer from high-intensity anxiety and numerous neurotic symptoms. The results showed a significant relationship between anxiety, symptoms and perceived control also among patients with personality disorders.

STUDY LIMITATIONS

We acknowledge the limitations of the study. There were insufficient diversities among the classification groups (neurotic disorders N=14, personality disorders N=19, double diagnosis N=16). It should also be noted that most patients in the neurotic disorders group were diagnosed with anxiety disorders, especially the mixed type – anxious-depressive (66.7%). Further research might increase the proportion of each diagnostic group and involve a healthy control population.

Despite these limitations, our study confirms that a relationship exists between low perceived control and high degree of neurotic psychopa-

thology. Considering the limitations of a one-dimensional model of perceived external-internal control, the study emphasizes potential value of Bryant's multidimensional model. More research is needed to explore the role of developing an appropriate perception of control in order to prevent and treat neurotic and personality disorders.

CONCLUSIONS

The study hypothesis was confirmed only in part, indicating that the studied phenomenon is more complex. Most of the various factors of perceived control are to some extent related to the personality structure, which is responsible for the occurrence and persistence of neurotic disorders, and to some extent to anxiety understood as a trait, which is an important predictor of neurotic disorders [42]. The study results are relevant to patients who suffer from neurotic symptoms and those diagnosed with neurotic disorders (F40-F48) and personality disorders (F60, F61) according to ICD-10 criteria. The intensity of neurotic symptoms not related to neurotic personality as well as actual experienced anxiety (anxiety-state) turns out to have no bearing on the degree to which an individual perceives their own global control in daily life.

The answer to the question about a higher degree of emotional or cognitive-behavioral control should be made in reference to distinguishing between control of negative or positive events. The structure of perceived control among patients indicates that people with neurotic and personality disorders have a stronger conviction about controlling negative events than harmful emotions occurring in response to a negative interpretation of such events. In what is interpreted as a favorable or pleasant event, there is no difference between the perception of own capability to "obtain" a positive event and to obtain positive emotional states in response to these events.

Regardless of a medical diagnosis, patients with neurotic and personality disorders manifest a lower degree of perceived control towards what is difficult, worrying or distressing than towards what is positive. At the same time, it means that they are more capable of obtaining

and savoring positive outcomes. Unfortunately, we could not compare these results to healthy controls in order to investigate the general degree of perceived control among patients.

The study emphasizes the significant role of personality background. Generally, the higher the intensity of neurotic psychopathology and anxiety-trait, the lower the degree of perceived control for events interpreted as a negative experience and as a positive experience, as well as control over events and over feelings occurring in response to a cognitive interpretation of an event. Results indicate that patients with a diagnosis of personality disorder have a significantly lower indicator of perceived control than patients with neurotic disorders. It especially pertains to experiencing positive feelings in response to events interpreted as positive.

It should be stressed that the conclusions relating to differences between neurotic and personality disorders need to be drawn very cautiously. Our patient group was heterogeneous – persons with personality disorders very often have a high intensity of neuroticism while persons with only neurotic disorders often have traits of different personality disorders other than traits of neurotic disorders. In practice, medical diagnosis is based on the clinical picture rather than etiology. Therefore, conclusions should be referred to the results of particular traits, not the medical diagnosis. The results of this study show that the differences mentioned above cannot be explained by the intensity of neurotic symptoms, anxiety-state, anxiety-trait and neurotic structure of personality. Due to this fact, this research problem is worth exploring further.

In summary, in viewing the degree of perceived control, what is of importance is not so much the medical diagnosis and intensity of actual neurotic symptoms, but the personality background of these symptoms. In light of these results, it is not possible to assess the degree of perceived control in a population of neurotic and personality disordered patients. However, as the correlation between the lower indicators of a sense of control and higher indicators of neurotic personality traits is observed, it may be concluded that there is a need to strengthen different components of perceived control in psychological interventions. The recognition of a low degree of perceived control may be an ex-

pression of personality disorders and should incline clinicians towards more diagnostic sensitivity and recommendation of treatment. Finally, effective treatment of personality and neurotic disorders (especially neurotic personality) should result in an enhanced perceived control.

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